The Committee for Environmental Protection: How effective has this body been and what are the key issues moving forward?

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INTRODUCTION

The Committee for Environmental Protection (CEP) is an advisory body established as part of the Antarctic Treaty System (ATS) in accordance with Article 11 of *The Protocol on Environmental Protection to the Antarctic Treaty* (Madrid Protocol or 'The Protocol'). This report will discuss the committee's advisory role to Antarctic Treaty Consultative Meetings (ATCM), the cross-over between being an advisory committee and an environmental advocate, how the committee's existence and actions have related to other environmental issues and developments in the Antarctic, and its relationship to other groups. Three examples will be reviewed to judge the effectiveness of the CEP in terms of remediating past environmental damage at the joint United States and New Zealand base remains at Cape Hallett, dealing with the controversial proposal to drill into Lake Vostok as well as area and species management. Clearly there are a broad range of environmentally related policies, programmes and activities occurring in Antarctica that are linked, or in some cases not linked, to the work of the CEP. The CEP's own analysis of issues it perceives as being relevant as it moves forward will then be discussed.

This report draws on ATCM and CEP meeting records, working papers and other related material. In preparing this report Dr Neil Gilbert kindly spent an hour with syndicate members discussing CEP related developments and issues currently being worked on by the committee.

BACKGROUND

During the 1980s pressure was building on the ATS to improve environmental standards in Antarctica. The possibility of mining drew attention to the continent, that led to environmental activism and raised public awareness of the abysmal environmental state of many nations' bases and their surrounding environs. To placate domestic concerns, avoid international pressure being bought to bear on the ATS (raising the issue of the Antarctic Treaty Consultative Parties' environmental competence and offering other possible governance models) and to ensure that Antarctica's near pristine environment was not compromised further the Madrid Protocol was agreed upon. Article 2 of the Protocol is a strong statement of environmental stewardship.

Objective and Designation

The Parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and hereby designate Antarctica as a natural reserve, devoted to peace and science.

The above statement elaborates on The Antarctic Treaty's Article IX 1. (f): '*preservation and conservation of living resources in Antarctica.'* The Protocol effectively establishes a 'third pillar' of 'natural reserve' in addition to 'peace and science' as *raisons d'etre* for the current Antarctic governance regime. The Protocol's Environmental Principles (Article 3) range from the intrinsic worth of Antarctica – in and of itself - to its value as a place of research into global issues:

Environmental Principles

1 The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

The Protocol, Article 2, lists the environmental standards and practices that are needed to conserve and manage the Antarctic environment for science. It then states that all human activity, including tourism, in Antarctica is to be environmentally sound.

3 Activities shall be planned and conducted in the Antarctic Treaty area so as to accord priority to scientific research and to preserve the value of Antarctica as an area for the conduct of such research, including research essential to understanding the global environment.

4 Activities undertaken in the Antarctic Treaty area pursuant to scientific research programs, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required in accordance with Article VII (5) of the Antarctic Treaty, including associated logistic activities, shall:

(a) take place in a manner consistent with the principles in this Article; and (b) be modified, suspended or cancelled if they result in or threaten to result in impacts upon the Antarctic environment or dependent or associated ecosystems inconsistent with those principles.

To provide the ATS with expert opinion on environmental matters the CEP was established (Article 12) with a broad mandate:

> *Functions of the Committee*
> 1 The functions of the Committee shall be to provide advice and formulate recommendations to the Parties in connection with the implementation of this Protocol, including the operation of its Annexes, for consideration at Antarctic Treaty Consultative Meetings, and to perform such other functions as may be referred to it by the Antarctic Treaty Consultative Meetings. In particular, it shall provide advice on:
> (a) the effectiveness of measures taken pursuant to this Protocol;
> (b) the need to update, strengthen or otherwise improve such measures;
> (c) the need for additional measures, including the need for additional Annexes, where appropriate;
> (d) the application and implementation of the environmental impact assessment procedures set out in Article 8 and Annex I;
> (e) means of minimising or mitigating environmental impacts of activities in the Antarctic Treaty area;
> (f) procedures for situations requiring urgent action, including response action in environmental emergencies;
> (g) the operation and further elaboration of the Antarctic Protected Area system;
> (h) inspection procedures, including formats for inspection reports and checklists for the conduct of inspections;
> (i) the collection, archiving, exchange and evaluation of information related to environmental protection;
> (j) the state of the Antarctic environment; and
> (k) the need for scientific research, including environmental monitoring, related to the implementation of this Protocol.
>
> 2 In carrying out its functions, the Committee shall, as appropriate, consult with the Scientific Committee on Antarctic Research, the Scientific Committee for the Conservation of Antarctic Marine Living Resources and other relevant scientific, environmental and technical organisations.

In reviewing the effectiveness of the CEP the first issue is that of its mandate to provide advice on a range of matters. The Protocol's Article 12 (1) outlines a number of matters that can be grouped into: environmental stewardship performance (a,k), establishing an environmental baseline, and collecting and collating ongoing data (h,i,j,k), regulatory oversight (a,h), activity evaluation and procedures (d), operation of the Antarctic Protected Area system (g), response procedures to emergency situations (f) and good practice and ongoing improvement (b,c,e). This is a broad mandate that allows a range of issues to be advised on, such as bioprospecting, that were not envisaged when the Protocol was written. One problem with such a mandate is that it can result in too many things being attempted with few being achieved.

The CEP must focus on core issues as it has modest support resources and no set budget. Currently, the CEP has no assigned paid staff with Dr Neil Gilbert, having to be both Antarctica New Zealand's Environment Manager and Chairperson of a committee that provides advice on the environment of ten percent of the planet. Now that the Antarctic Treaty Secretariat office is operating the CEP has access to some of their administrative and clerical resources. The CEP meets annually with meeting and translation costs being provided by the host country and ATS. Unlike the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR, 1980) that operates in English, the CEP is obliged, by The Protocol, to work in English, French, Russian and Spanish, placing prohibitive costs for additional meetings. To assist the CEP in overcoming this limitation the concept of an activity having a 'common language/s' (i.e. Spanish and English) where appropriate is being discussed.

The ongoing inability of the CEP to produce a State of the Antarctic Environment Report (SAER) (Article 12. (j)) is a major constraint on the committee's effectiveness. In 1999 a '*Report on the work of the intercessional contact group on a State of the Antarctica Environment Report (SAER)* was presented to as a working paper to ATCM XXIII. Issues included 'who the target audience should be, the nature of the report and resource implications.' Consensus was not reached on how to proceed with the lack of funding being a major issue. In July 2005 the Scientific Committee on Antarctic Research (SCAR), Committee of Managers National Antarctic Programmes (COMNAP) and the Joint Committee on Antarctic Data Management (JCADM) produced a report on the Antarctic Master Director (AMD) and National Antarctic Data Centres (NADCs) – a potential source of much information for the SAER.

The report noted that a maximum of 40 percent of data sets are in AMD and identified that 'direct links to the CEP and CCMALR are also needed for JCADM.'

In 2001 the New Zealand Antarctic Institute produced the *Ross Sea Region 2001: A Sate of the Environment Report for the Ross Sea Region of Antarctica.* The objectives of the report included:

> To provide information to the Antarctic Committee for Environmental Protection in relation to its state of the environment reporting objectives under the Protocol on Environmental Protection to the Antarctic Treaty, particularly the requirement for monitoring of environmental impacts, including cumulative effects.'

In producing a high quality state of the environment report New Zealand has led by example and supported the CEP in its efforts to gain additional baseline information.

In 2005 COMNAP released its *Practical Guidelines for Developing and Designing Environmental Monitoring Programmes in Antarctica.* Developed by the Antarctic Environmental Officers Network (AEON), this document clearly states the need for environmental monitoring and provides guidelines on how to implement appropriate programmes in conjunction with a technical handbook published by SCAR and COMNAP in 2000. Interestingly the observation is made that: 'It is important to note that these guidelines have no mandatory status and are available for use by national Antarctic Programmes at their own discretion.' The guidelines refer to the CEP in relationship to the SAER and environmental monitoring. In addition, SCAR and COMNAP submitted a paper on *Practical Biological Indicators of Human Impacts in Antarctica* to CEP IX. Clearly Antarctic environmental issues are not the sole domain of the CEP. The need to get a coherent set of data on previous activities that may have a cumulative, or disruptive effect, is being undertaken by the COMNAP Secretariat. One area being addressed is the location of crashed aircraft and associated items that could disrupt future scientific work in Antarctica. The Antarctic Treaty Secretariat hope to have a centralised inventory of such information operating within a year or two.

Since 1998 the CEP has been providing advice to the ATCM. The following table clearly demonstrates the CEP's effectiveness at this level:

Table 1: Issues referred to ATCM by the CEP (CEP 2005).

Agenda item	**Total # of papers submitted CEP I-VII**	**Total # of WP submitted CEP I-VII**	**Total # of IP submitted CEP I-VII**
General Matters			
a) Operation of the CEP	13	12	1
b) Compliance with the Madrid Protocol	134	5	129
Matters covered by Annex I			
a) Consideration of Draft CEEs	19	8	11
b) Other Matters covered by Annex I	63	13	50
Matters covered by Annex II	35	20	15
Matters covered by Annex III	27	0	27
Matters covered by Annex IV	13	3	10
Matters covered by Annex V	136	85	51
Environmental Monitoring	22	5	17
State of the Antarctic Environment Report	14	7	7
Biological Prospecting	3	0	3
Emergency Response and Contingency Planning	16	7	9
Data and Exchange of Information	9	5	4
Co-operation with other organizations	12	0	12
[TOTALS]	[516]	[170]	[346]

> *The high number of IPs under "Compliance with Madrid Protocol" is associated to the Annual reports submitted under Article 17 of the Protocol; while the high number of WPs under "Matters covered by Annex V" is due to the requirement for revised Management Plans for existing protected area, and proposals for the designation of new ones have to be submitted in WPs* (CEP 2005).

During the above period, matters raised by the CEP at ATCMs have resulted in fifteen measures, twelve resolutions and five decisions. The observation is made that: 'a little less than half the provisions regulating human activities in Antarctica have directly stemmed from the work of the CEP.' (CEP 2005).

Initially the CEP focused on procedural matters, environmental activity assessment and area management, then more specific issues. In recent years attention has been given to the environmental impact of fuel, ballast water, site guidelines for tourists and specific species protection or delisting. During this time the ATCM (that usually receives the CEP report over an hour and a half) has asked the CEP only two questions: the order of the Protocol annexes and passenger limits at landings.

Countries operating in Antarctica can be divided as the powerful, the purposeful and the poor. Clearly the United States' Antarctic operations are the largest on the continent with large impacts. Despite America's *hyperpussiance,* it is constrained but their domestic Antarctic and environmental law, a desire to demonstrate responsible environmental stewardship and the need not to disrupt their own, and other, science programmes with pollution. The installation of a fully wielded fuel pipeline (the previous pipelines joints frequently leaked) from McMurdo Station to Williams Field is example of improved environmental standards. However there has been concern about the 'routeway' to the South Pole. New Zealand and other medium sized countries are committed to environmental best practice as an example to others and to satisfy their own standards. The Australian Antarctic Division's certification as ISO 14001 accredited is an excellent example of how a national Antarctic programme has raised its environmental standards and in doing so the level by which other programmes will be judged. Nations are also bound by other international environmental agreements such as The International Convention for the Prevention of Pollution of the Sea by Oil (MARPOL, 1973/78) and Convention for Biological Diversity (CBD, 1992). In contrast less affluent parties have considerable room for improvement and education in environmental matters. Especially those programmes based on South American military forces. Whilst a country could 'go its own way' they would face considerable opposition in the face of increasing environmental standards for Antarctica. In many cases pressure from their 'Antarctican' peers is also a formidable force.

REPORT PROPER

The following examples illustrate some aspects of the CEP and if it has been an effective body. An example of past operation of the CEP is the clean up of Hallett Station and the cumulative impact of human activity in Antarctica. Species protection and area management will show current operations of the CEP. Lake Vostok drilling will demonstrate a CEP issue that has not yet been resolved.

Cape Hallett

Hallett Station at Cape Hallett, Northern Victoria Land, Ross Sea Region was a joint United States and New Zealand research station from 1957 to 1973. It was occupied all year round until 1964 when the main research lab was destroyed by fire, and then it was only used during the summer months until 1973 when it was abandoned (Antarctica NZ, 2006). During the 1980s and 1990s a large amount of the buildings, equipment and debris from the site was removed but some structures, fuel tanks and debris were left. This triggered an Environmental Site Assessment to be carried out by New Zealand and the United States in 2001. This led to the development of a multi year clean up and remediation plan for the station site and surrounding area. The remaining buildings, fuel and debris were removed from the site during the 2003/04 season (Antarctica NZ 2006). The huts were dismantled, the debris was collected and preparation made for the removal of fuel tanks. In January 2005 an Italian vessel removed 28 metric tons of material and brought it back to New Zealand (Antarctica NZ, 2005). Figure 1 displays the location of the former station, and the penguin colony on Seabee Hook, Cape Hallett. A colony of Adelie penguins occupied the area where Hallett Station was to be built. To overcome this 'problem', the penguins were moved from their colony site and a fence was built to prevent re-colonisation. 10,000 penguin pairs were removed from their nests. They were further disturbed through scientific work on the birds, vehicles and snowdrifts, preventing nest establishment during the operation of the station (Waterhouse, 2001).

Since the removal of the remaining parts of the station, America has further promoted Cape Hallett as an Antarctic Specially Protected Area (ASPA). Cape Hallett is an ecosystem of outstanding scientific interest. It includes a small patch of particularly rich and diverse vegetation which supports a variety of terrestrial fauna and a rich avifauna (ATCM, 1966). In 1996 it was recommended that Cape Hallett be entered into Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora (ATCM, 1966).

The cumulative effects of situations such as station abandonment can be devastating on the Antarctic environment. Over a period of twelve months, an abandoned station will have minimal impact, but if left in the Antarctic for a long period of time the impacts are far worse. Hallett Station was left for twenty two years before it was completely removed, and the cumulative effects this had on the environment were high. For example, the soil is so compacted during and after the operation of the base, that the area that was once flourished with Adelie penguins was no longer suitable for nesting birds (Waterhouse, 2001). The impact abandoned fuel has on the area is also cumulative. If a leakage occurs, the soil is covered in hydrocarbons which often seep down into the soil bed. To accommodate for the plan for nesting birds to re-colonise the area, it was planned to furrow the soil and create nests for the birds. To ensure further pollution of the birds did not occur, the area was checked to see if hydrocarbons had been released into the soil been. The furrows were dug and no pollution was found (Neil Gilbert, 2006).

There is good baseline data on the environmental effects the old station had on the area of Cape Hallett and the how the ecosystem had changed. The vegetation change at Hallett station has been mapped between 1962 and 2004, and this appears to be the longest period of time vegetation change has been assessed in Antarctica (Brabyn *et al*, 2006). 87% of the area surveyed by Brabyn *et al* (2006), showed vegetation change. Brabyn *et al* (2006) concluded this was because of increased moisture in the area due to increased precipitation, there was no suggestion it was due to the presence of the research station. There is no doubt that the Adelie penguins moved during the station construction were negatively effected by the process. Studies have been done to investigate the impact the abandoned station and fuel has had on the penguins. Assessments found that many Adelie penguin chicks had oil contaminated feathers, it was found to come from petrol residues in melt pools on site (NSF, 2006). Latitudinal Gradient Project (LGP) has worked at Cape Hallett to increase the understanding of coastal ecosystems in Antarctica. This will provide current and future information on soils and the effects of hydrocarbon degradation in the soils from the former station (Landcare Research, 2007). The research done at the site during occupation of the station provides extensive baseline data on weather and biological processes occurring in the area (Antarctica NZ, 2005). An intercessional contact group within the Committee for Environmental Protection (CEP) has examined research on cumulative impacts in Antarctica. They collected annotated summaries of past and continuing studies and examined cumulative environmental impacts within these. They were collected from Australia, Argentina, Sweden, New Zealand, the United States and the United Kingdom (CEP, 2002a).

Working paper 19 was submitted to the CEP by the United States of America at the fourth CEP meeting in St. Petersburg in July 2001 (CEP, 2007). It was for the revised management plan for the Cape Hallett specially protected area. It involved the clean up but was primarily for after the area was cleaned up. The area is protected for its ecological, scientific and aesthetic values, and to protect the biological resources in the area and the impressive surrounding scenery (SCAR, 2003). In 2002, the United States of America submitted a working paper on the review of the five-year draft for Protected Area Management Plan for Antarctic Specially Protected Area (ASPA) No. 106 Cape Hallett (CEP, 2007). This submission appears in the CEP Handbook as Measure One from the fifth CEP meeting. At the Antarctic Treaty Consultative Meeting (ATCM) a recalling was made under Resolution One of 1998 and it was allocated the responsibility among Consultative Parties to revise Management Plans for Protected Areas, including Cape Hallett (SCAR, 2003). The CEP noted that they and the Scientific Committee on Antarctic Research (SCAR) had endorsed the draft management plan, and they recognised that Cape Hallett supported outstanding natural features and biology of scientific interest (CEP, 2006b). The CEP recommended to the US Government this measure for approval under Annex Five from the PROTOCOL under the Antarctic Treaty System and that it be adopted into the American Antarctic Program (CEP, 2006b).

No formal advice was given to the ATCM by CEP in regards to the clean up of Hallett Station. In this regard, the operation of the clean up within the CEP was very successful. The CEP has noted the Cape Hallett clean up as a very good example of how the clean up of an abandoned station can be relatively easy and very successful (Neil Gilbert, 2006). Although Cape Hallett is a long way from the New Zealand and American bases, the clean up was successful. Monitoring of the area and effectiveness of the clean up effort will be on-going (CEP, 2006a). The CEP established an intercessional contact group during the CEP IV meeting in St. Petersburg in 2002 which were to coordinate the approach of monitoring cumulative impacts in Antarctica (CEP, 2003a). This group spent two years investigating the cumulative effects of human activity in Antarctica. They produced a table stating what cumulative effects the participating countries were having or have had on the Antarctic environment. They commented on the cumulative environmental impacts of ship-based tourism in the peninsula area in regards to an independent steering group of experts to coordinate the necessary actions required to minimise cumulative impacts (CEP, 2003a). They also suggested developing a database for storing data on cumulative effects. They commented on approaches introduced to conduct studies on cumulative impacts (CEP, 2003a).

The clean up of Cape Hallett is a good example of how clean up of an area has been successful. It has been successful in terms of eliminating the environmental impact of the old buildings and fuel, promoting environmental cooperation between America, Italy and New Zealand and adding to the Antarctic collection at Canterbury Museum. By removing old fuel sources and buildings, penguins have begun to reoccupy the area and the ecosystem can begin the slow process of recovery back to its original condition. During the site clean up, a successful logistical cooperation between the American, New Zealand and Italian Antarctic programs was evident, in that they all worked together to remove the station and prevent further environmental degradation of the area. This promotes to other countries within the Antarctic Treaty System that international environmental cooperation is achievable. The CEO of Antarctica New Zealand, Lou Sanson was delighted at the opportunity to transfer the key parts of Hallett Station to Canterbury museum as it strengthens the connection between the museum's Antarctic collection and Antarctica New Zealand (Antarctica NZ, 2005). The museum received the geomagnetic dome, 60 oil drums, crockery, bedding and three huts after they were shipped back in February 2005. Anthony Wright, the director of Canterbury Museum was proud to receive the artifacts from Antarctica and noted that they make a significant addition to the museums existing Antarctic collection (Antarctica NZ, 2005). The international Antarctic community has recognised that the artifacts are of significant historic interest (Antarctica NZ, 2005).

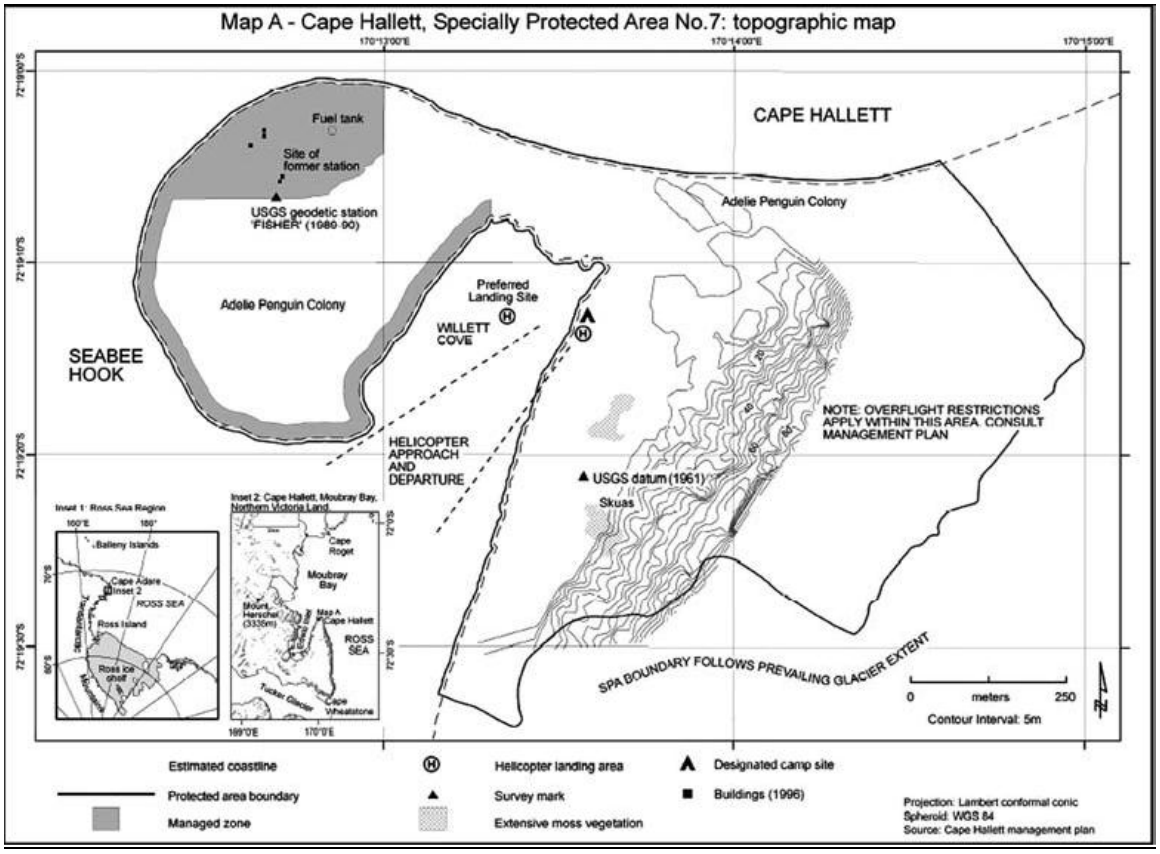

FIGURE 1: Cape Hallett map showing location of Specially Protected Area
Source: Cape Hallett Management Plan

Area and Species Management

In implementing the Protocol the CEP offers advice and formulates recommendations to the ATCM regarding the operation and further elaboration of the Antarctic Protected Area system (CEP 2006b) Ecosystem understanding is an important input to effective area and species management as well as state of the environment data, which is not currently achieved due to a lack of time, resources and long term action plan.

Species distributions are dynamic and are never static. Species exist in an ecosystem where their biotic factors interact with the abiotic factors of the environment. As the environment is dynamic this is the functional role of the species to be dynamic also and alter their distribution to the changing abiotic conditions. It is important to understand the abiotic and biotic factors of species and organisms so we can protect them in their immediate environments and also predict future areas where they may be distributed and protect them also. Another aspect to consider is that species occupy a range of areas and for some species a pattern or spatial array of protected areas will be more beneficial. Having a spatial distribution of protected areas will be better than one area.

As noted above, the absence of a SAER does have a negative impact in effective planning for area and species management. The Ross Sea State of the Environment Report notes that there is difficulty in managing in isolation rather than within the context of wider ecosystem perspectives (Waterhouse 2001). The CEP has no resources to undertake its own research. Rather, to make informed decisions and recommendations the CEP requests that SCAR, and others, produce the relevant scientific information that is generally used for working groups to produce papers that will be presented to future meetings or to be used at workshops. The CEP has been able to draw on a large body of existing research, however in some cases such as the Southern Giant Petrel it has requested further information be gathered to allow future ATCM to make a more informed choice. Information from SCAR seems to be readily available and asked for, both from the CEP and ATCM regarding issues on species protection and area management.

One of the most important requirements of the CEP is to have sufficient information and knowledge to understand and consequently protect the Antarctic environment (CEP 2006c). Improving area and species protection is a headline goal of the CEP and along with this goal are others such as improvement of knowledge and awareness of ecosystem processes which will feed into area and species protection. Also to increase the knowledge and understanding of the state of the Antarctic environment, this is currently not being achieved in depth. With regard to species protection they seek advice from SCAR, other organisations, institutions and specialists.

For the development of management plans for ASPA's and ASMA's information is presented to the CEP in the form of working and information papers that are presented by individual countries or experts. Some of these working papers have been reviewed by Intersessional Contact Groups (ICG) and others are not. With the exception of special workshops, this is the only forum for experts to prepare advice outside of the CEP meeting.

It can take years to undertake the relevant research and working group discussions that produce reports for the CEP to consider. A difficulty that the CEP faces is that many activities require additional research before an informed decision can be made. Ironically the research proposed may offer the information needed to base the decision for approval or otherwise, a 'chicken and egg' situation. In many cases the CEP takes a precautionary approach based analogous experiences in similar situations.

The final report of the ninth CEP meeting in 2006, documents a history of consideration regarding the strategic discussion on the future of the CEP. The report refers to working and information papers that lead to discussions that were held at the 2006 meeting and were then fed into the ATCM meeting regarding the increasing agenda.

It has been proposed that a five year plan be produced for the CEP in order to cover all the agenda issues over five years rather than all in one year. It is thought that this strategy will solve the issue of the lack of time allocated for the agenda items. The ATCM recognised this issue and asked to be kept informed of the progress with the initiative of the five year plan.

Guidelines have been followed when selecting areas for area protection and implementing management plans. The CEP has provided and produced guidelines of the selection and formation of management areas and plans. The guidelines have been revised through the life of the CEP which indicates that the CEP is not a static body and they recognise the need to review systems and ensure there is standard practice.

Upon close examination of the 2006, 2005 and 2004 CEP and ATCM reports, the recommendations that the CEP put forward to the ATCM were acknowledged and accepted by the ATCM. The results were that the management plans were recommended to the governments of the ATS to approve the measures, decisions and recommendations.

In 2005 meetings discussion regarding species protection was dominated by the issue of delisting the fur seal and procedures for the addition of the southern giant petrel. SCAR presented working papers on species lists and feedback from past meetings.

For selection of areas and species for protection in the future, ecosystem values should also be considered. To consider the ecosystem as whole rather than small isolated areas would be beneficial for the protection system. The ecosystem value of an area will provide managers with an insight into the value of the area in the wider ecosystem context. In the face of climate change and consequent environmental change the dynamics in species distribution will require this ecosystem approach. The same approach is needed for area protection because the ecosystems may exist in a number of different areas. The migration of species distribution and ecosystem ranges the protection of a gradient may be more successful than the protection of a single area.

It will be important for the CEP to understand what the most significant environmental issues for Antarctica are at present and into the foreseeable future. Draw upon other existing frameworks to identify and address these issues (CEP 2006c). To set goals for the CEP, the significant interactions between human activities and the Antarctic environment is the most vital step to understand. It is the human interaction that is creating this work and agenda.

The CEP recognises that there is a lack of state of the environment reporting. This is important in order to achieve any goal of the CEP and must be agreed upon by all and measures put in place to make this an active procedure. If this basic knowledge is not clearly understood then ecosystem processes may not be understood or considered with regard to area and species management.

To effectively understand the individual species and to effectively manage them they need to be considered in the context of area and their function within the ecosystem. Ecosystem processes also need to be understood with regard to environmental change as a natural response to climate change. The CEP does recognise that the current method of operation is not efficient and they have endeavoured to address the issue with workshops and papers that have found a solution. This is the initiative of the five year strategy where all issues will be addressed over a longer time frame rather than being addressed in less detail at every meeting. In this regard the CEP is an effective dynamic body that is aware of its operation and the increasing pressure on the Antarctic environment. They recognise their role and are addressing issues to achieve a desired outcome to maintain Antarctica for peaceful and scientific purposes (CEP 2006c). With this consideration the outlook for the future is positive in that the effectiveness of the CEP is improving.

Area protection and management in Antarctica has been active since 1964. Under the Agreed Measures for the Conservation of Fauna and Flora areas could be issued with Specially Protected Areas (SPAs) status, from 1975 a new initiative was to protect Sites of Special Scientific Interest (SSSIs). These earlier categories of specially protected area status were replaced by new categories under Annex V of the Environmental Protocol. These are Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs). An ASPA is designed to protect any area of Antarctica that has outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of these values, or for ongoing or planned scientific research (ATS, 2007). An ASMA has been designed to protect areas of Antarctica where activities are being conducted currently or in the future, to assist in the planning and co-ordination of activities by avoiding potential conflict and to improve co-operation between parties and to minimise environmental impacts (ATS, 2007). During the time of the Treaty there have been areas of Antarctica where there is a recognised need to protect their environment, scientific or historic values. This has been a dynamic process and since the Environmental Protocol there has been greater management and recognition. The Protocol provides general rules to protect the Antarctic environment and also the CEP have provided guidelines for the selection and production of management plans for new areas. There has been steady growth of protected area status and in 2006, 67 ASMAs and 4 ASMAs have been adopted. Management Plans are produced by member states of the CEP and are considered at the meetings. The final recommendations are provided to the ATCM and are recommended to the governments of the ATCM to be implemented.

The conservation of Antarctic fauna and flora has been a concern from the beginning of the Antarctic Treaty System. This is because of the sensitivity to damage from human activity of the wildlife that inhabit such extreme environmental conditions. From the third ATCM the Agreed Measures for the Conservation of Antarctic Flora and Fauna was adopted (ATS, 2007). The Environmental Protocol has provided an advanced level of protection from that of the Treaty. Annex II of the Protocol provides general rules for human activities that provide holistic protection as well as different mechanisms such as prohibition of removing or interfering with species, prohibition of introducing non-native species and the designation of Specially Protected Species. At each meeting there have been working and information papers presented providing information on specific species, guidelines for combating biosecurity and research data regarding Antarctic flora and fauna. There has only been one Measure adopted and that has been to de-list the Fur Seal in 2006.

From the final reports of the CEP meetings it is evident that the conservation of Antarctic flora and fauna is an active agenda item.

Lake Vostok

The Vostok station is situated in plain snow surface of the glacial plateau of East Antarctica. The coordinates of the station are 78°29` S, 106°49` E, at the elevation of 3488 m above sea level. The thickness of the ice cover is about 3700 m. The lower ice surface under the station is about 200 m below sea level. There are no bedrock outcrops. The geographical location of the station , especially of the underlying surface , regime of solar radiation and atmospheric circulation govern general glimate severity. The air temperatures are unusually low, all year round. Mean annual air temperature at the station is equal to –55.4°C.

Glacial-drilling activity at Vostok station was started in 1970. From 1980 isotopic-geochemical studies have become widespread. The Antarctic ice sheet is a unique archive storing in the most pristine form information about the past state and changes of climate and the environment. For millennia, it accumulated solid atmospheric precipitation, atmospheric aerosol components and the atmospheric air itself entrapped in the form of gaseous bubbles in the process of ice formation. The ice core samples extracted from deep boreholes have allowed obtaining the unique data on paleoclimate (CEP, 1998a)

CEP I

The Russian Federation introduced Information Paper (XXII ATCM/IP 68) on the environmental impact of the Deep Drilling Project at Vostok Station. The issue of whether to continue drilling into the large sub-glacial lake underneath Vostok Station raised a number of questions related both to science and to environmental impact assessment. The Russian Federation indicated that it intends to produce a draft Comprehensive Environmental Evaluation (CEE) for the proposed drilling into the sub-glacial lake before the next CEP, as called for in Annex I, Article 3, paragraph 4 of the Protocol. (Report from the Committee's first meeting (CEP, 1998b)).

CEPII

Russia presented Information Paper XXIII ATCM/IP 73 on the current and projected environmental situation at deep borehole 5G1, at the Vostol Station. Russia is proceeded with great care and in full compliance with the protocol. There has been cooperation with SCAR to ensure such compliance. The Information Paper noted that a CEE would be prepared before any penetration into Lake Vostok. At this point it was considered adequate technology was not available and therefore the planned CEE could not be completed.

The Committee acknowledged that this activity raised a series of environmental, scientific, and technical concerns, and accordingly Russia it should continue to proceed with great care. The Committee noted that the testing of new technologies could affect the unique conditions at Lake Vostok and it suggested that such testing should preferably take place at less sensitive sites (Report from the Committee's second meeting (CEP, 1999)).

CEPIV

The Russian Federation presented Working Paper (XXIV ATCM/WP 29) containing a preliminary expert conclusion from Russian State Ecological Expert Committee for proposed ecologically clean technology for penetrating the sub-glacial Lake Vostok. The Committee noted that a draft CEE would be submitted for the project at a later stage. Several comments were made on the project. There would be need for an analysis of the levels of contamination that are acceptable to safeguard the scientific and environmental values of the lake and there were various comments of the issues of field trials, including at locations other that Lake Vostok, and the planned timetable. Russia noted that there are still some uncertainties related to funding. Russia requested comments from Parties on the Working Paper, and several Parties offered to provide them (Report from the Committee's fourth meeting (CEP, 2001)).

CEPV

The Russian Federation presented Working Paper (XXV ATCM/WP 19) dealing with water sampling of the sub-glacial Lake Vostok. The Russian Federation listed this as a draft CEE, but it was not submitted in accordance with Article 3 of Annex I to the Protocol. The Committee agreed that the draft CEE would be formally considered at CEPVI.

SCAR presented Information Paper (XXV ATCM/IP 55) giving a progress report on their consideration of exploring sub-glacial Antarctic lake. SCAR noted that there was no international consensus among the scientific community on appropriate lake sampling or drilling methods to penetrate into the lake. Concern about the possibility of accidental penetration and contamination of Lake Vostok was made.

The Russian Federation advised that it would delay drilling an additional 50 meters of the ice until 2003/2004 season, and that it intends to produce an Initial Environmental Evaluation (IEE) for this drilling. The Russian Federation promised to revised the draft CEE concerning the drilling from 3673 meters to 3753 meters the ice-water interface. This drilling was planned to start in the 2004/2005 season and it was supposed to continue until the contact was made with lake surface in 2006/2007.

The CEP established an intersessinal contact group convened by Jean Jacques Reyser from France to consider and advise on the draft CEE at CEPVI (Report from the Committee's fifth meeting (CEP, 2002b)).

CEPVI

The Russian Federation introduced its revised draft CEE for Water Sampling of the Sub-glacial Lake Vostok (ATCM XXVI/ 01) circulated by the Russian Federation on 6 February 2003.

In response to a query from New Zealand on the sterility of the drilling fluid the Russian Federation explained that there are micro-organisms in the fluid but not in the ice. It is possible to produce sterile drilling fluid. And it is not expected that the drilling technique will allow micro-organisms to penetrate the ice-water interface.

The Russian Federation noted that the penetration theory and technique have been tested under similar conditions.

France introduced the report of the Intersessional Contact Group (ICG) ATCM XXVI/WP 36 convened to consider the Lake Vostok draft CEE. ICG's conclusion was that the document does not adequately address the description of the activity, the drilling technique, plans for sudden environmental accidents, or alternative solution including testing the technology in similar, but less critical situations.

The Netherlands noted that its review of the draft CEE ATCM XXVI/IP 092 concluded that it did not analyse worst-case scenarios, including spillage of drilling fluids or the possibility that the lake water is pressurised.

SCAR presented its paper on the Lake Vostok proposal ATCM XXVI/IP 94, which advised that the Lake Vostok project was at the current limits of both technology and glaciology. SCAR suggested that a more rigour evaluation was required of the potential for chemical and biological contamination, as well as the risk that the lake water was pressurised and could cause hydro-fracturing leading to accidental penetration by drilling fluid.

Norway noted that there were still many uncertainties regarding the physical properties of the ice-water system. They suggested that the sampling could be limited to frozen lake water. This way the sampling could be undertaken more safely from a new drill hole through ice over rock at the lake margin. New Zealand noted that there could be a risk of abnormally high pressures beneath the ice. New Zealand also suggested an alternative view, that hydrostatic pressures could not build up in this setting because the ice over the lake was floating. New Zealand suggested that a body with appropriate expertise such as SCAR, might review this issue and develop advice to improve the quality of risk assessment.

Russia noted that comments in Appendix 2 of this Final Report (CEP Advice to ATCM XXVI on the draft CEE contained in ATCM XXVI/WP 01) were of a generic nature and did not contained any specific proposals on the use of alternative technologies and methods to take water samples from Lake Vostok. Russia established procedures to consider applications for Antarctic Activities, which allowed it to meet the requirements of the Protocol. The Russian Interministerial Commission reviewed the responses of Russian experts to the comments received, and this occured within the context of deciding about the permit required for the Lake Vostok water sampling project.

CEP's advice to ATCMXXVI

The Committee considered that parts of the draft CEE did not meet some of the requirements of Annex 1, article 3, of the protocol, specially:

1. *The draft CEE provides insufficient consideration to reduce the potential environmental risk posed by the activity*
2. *Insufficient information is provided on the special drilling fluid to support the conclusion that it is 'ecologically clean'*
3. *The treatment of alternatives to the proposed activity is inadequate and should include alternative solutions*

4. *The draft CEE does not adequately identify and discuss gaps in knowledge particularly as related to the question of the ice-water interface conditions and lake chemistry.*
5. *The draft CEE does not adequately address the risk of accidental release of drilling fluid into the lake and the potential consequences of this release.*
6. *Consistent with Annex 1, Article 3, paragraph 2(g), contingency plans should be developed to deal promptly and effectively with unforeseen impacts if the activities do not proceed as predicted.*

Recommendation from CEP to ATCM

The Committee recommends that the Russia Federation be urged to consider carefully this advice, and make such revisions in the final CEE as may be necessary to address the above insufficiencies and produce a final CEE that is fully consistent with the requirements of Annex 1 of the Protocol (Report from the Committee's sixth meeting (CEP, 2003b)).

CEPIX

The Russian Federation introduced IP 68 Russian Studies of the subglacial Lake Vostok in the season of 2005-2006 and Work Plans for the season of 2006-2007. An Initial Environmental Evaluation was presented as part of IP69 Drilling of Additional 75 m in deep Borehole 5G-1. Extensive discussion took place and several Members sought clarification on the timing of activities, and environmental issues surrounding the drilling at Lake Vostok.

The United Kingdom referred to recent British research suggesting that some Antarctic subglacial lakes may be interconnected, and questioned whether this had implications for the proposed penetration of Lake Vostok.

SCAR noted that it was aware of recent scientific literature which suggested that if one sub-glacial lake was contaminated, contamination may spread downstream to connected lakes. SCAR's Subglacial Antarctic Lakes Exploration group (SALE) had discussed the possibility of connected lakes. SCAR noted that the risks of continued drilling at Lake Vostok were twofold: *(i) accidental penetration of the lake, and ensuing contamination; (ii) the potential for drilling fluids to percolate from the borehole into the lake through tiny cracks (hydrofracturing) in the deeper ice just above the lake surface.*

New Zealand discussed removing the drilling fluid from the borehole before it collided with the edge of the subglacial lake, and allthough additional improvement is inquired there are technological solutions to this process.

Russia noted that there were no objective scientific data on the existence of subglacial lake systems linked to Lake Vostok. Russian and US ground-based and airborne radar surveys of sub-ice structures did not provide any evidence of drainage systems. The soundness of theoretical conclusions made by the Russian designers of the Lake Vostok drilling technology was confirmed by practical activities of Danish experts in northern Greenland in 2003-2004, and German experts at Antarctic Kohnen station (Dronning Maud Land) in 2005. Russian scientists were using the same drill liquid as the European drilling projects (a kerosene / freon mix). Pollution studies in the Greenland borehole indicated that only the upper 10 cm was actually contaminated.

The ice core from the Vostok borehole at 3,623-3,650 meters is still structured as large (up to 1.5 m diameter) crystals with insignificant intercrystal spaces, which largely prevents rapid leakage of the drill liquid towards the water body.

Russia indicated that its future drilling activities at Vostok would be fully consistent with the Environmental Protocol and Russian national legislation. The final CEE for Lake Vostok water sampling would be presented at CEPX (Report from the Committee's seventh meeting (CEP, 2006e)).

DISCUSSION

In June 2006 the CEP held a workshop, in Edinburgh, to discuss a vision for Antarctica, major environmental issues and goals. The meeting reports notes twice, that there was 'insufficient time' but that 'broadly' speaking agreement was reached on a number of issues, themes and goals (CEP, 2006c), (CEP, 2006d). The meeting recognized that Antarctica's environment faced internal threats from human activity related to science and tourism. These threats included an increasing 'human footprint, aging infrastructure, introduced species (a major concern is that tourist ships may transit from the Arctic with viable biological material attached to the hull) and contamination from activities. External threats included: contamination from further a field, climate change, ozone depletion, and other impacts from global change, commercial exploitation (including tourism and IUU fishing) and the possibility of negative outcomes from sub-glacial lake drilling. The meeting's identified goals focused on the need to understand the Antarctic environment more clearly so that more effective environmental measures could be developed and implemented, and to reduce the human footprint through improved operations and energy management. In WP 42 the workshop elaborated on 'Major Environmental Issues Facing the Antarctic'.

RECOMMENDATION

In considering a Recommendation to make to the ATCM Eliyahu M. Goldratt's 'Theory of Constraint' - based partly on Liebig's 'Law of the Minimum' - was used to identify the major 'constraint' on the CEP's effectiveness that could realistically be resolved. Clearly the lack of a full-time staff to support the CEP is the current constraint on its effectiveness. Accordingly the syndicate have drafted the appended Recommendation (based on that used for establishing the Antarctic Treaty Secretariat) to establish a CEP Secretariat (refer to Appendix Four).

CONCLUSION

The CEP had very little involvement in the clean up of Cape Hallett. The proposals for the work were agreed with and the clean up has been promoted as a good example of clean up work in Antarctica. Although the CEP made no formal recommendation to the ATCM, this activity assisted the CEP to become more effective. The clean up of Cape Hallett is used, by the CEP, as a best practice example. It puts right a high profile mistake made in 1957 when an Adelie penguin colony was moved to make space for the construction of the station. It promoted strong international cooperation between New Zealand, United States of America and Italy. These three countries worked together to clean up past pollution, remove the base and its supplies to prevent further environmental impact, and reinstate the area as a penguin rookery. When the base was removed from the site, it was brought by ship to New Zealand and handed over to the Canterbury Museum. This strengthened the connection between Antarctica New Zealand and the heritage community of New Zealand, and it makes available to the public an important part of New Zealand's Antarctic history. The baseline data for this site appears to be adequate. Vegetation change has been studied for 42 years at Cape Hallett, the impacts the station had and may still be having on the neighbouring penguin colony has been research and recorded. The Latitudinal Gradient Project is currently producing results to help with the understanding of coastal ecosystems at Cape Hallett. The clean up of Cape Hallett is an example of how the CEP has acted effectively. There were no major issues with the clean up activities and the process is promoted by the CEP as a best practice case.

The Antarctic environment has been actively protected since 1964, where areas were identified as having significant value and were issued with Specially Protected Area status. After the establishment of the Environmental Protocol these categories were replaced by new management regimes. Areas of the Antarctic environment are now selected by the recognition of outstanding environmental, scientific, historic, aesthetic or wilderness values. There are two categories of protection, these being Antarctic Specially Protected Areas and Antarctic Specially Managed Areas.

The CEP has been effective in the implementation of the Protocol where guidelines have been established and updated over the last nine years. There has also been a steady growth of protected area status. The ATCM have implemented recommendations that have been put forward by the CEP. An understanding of the state of the Antarctic environment will provide the CEP with a greater knowledge of the areas of Antarctica that have values of merit and are under threat of human interaction.

Due to the sensitivity to damage, caused by human activity, of the wildlife that inhabit such an extreme environment, the conservation of fauna and flora has been of concern from the establishment of the ATS. The Environmental Protocol has provided an advanced level of protection through the work of the CEP. The most recent measure has been the recognition of the conservation success for the Antarctic Fur Seal, and it's de-listing from Specially Protected Species status. There is ongoing discussion and effort regarding the Southern Giant Petrel to include it as a Specially Protected Species.

Drilling Lake Vostok has been one of the most important Environmental Assessments in CEP's history. In the early stage the drilling technology was not sufficient enough and there was a lot of scientific and environmental issues. Russia produced the draft CEE in 2002, but the CEP did not approve it. It was not submitted in accordance with Article 3 of Annex I to the Protocol, there were still too many unanswered questions. For the tenth CEP meeting, in 2007, the final Comprehensive Environmental Evaluation for the Lake Vostok is expected to be ready. It seems that Russia is getting ready to penetrate Lake Vostok.

The CEP has been effective in the case of Lake Vostok. Russia wants to follow the Environmental Protocol and it has been willing to make changes for the project when needed. The Russian Federation has also been able to improve their drilling technology and make contingency plans.

The CEP has been providing recommendations to ATCM, and ATCM has been taking these into account. The future will tell what will happen in the Vostok Station, and when the penetration into the lake will happen. Despite that the CEP has only the status of advising, it succesfully fulfills its mandate. The CEP and its members have been active and The Russian Federation has been patient.

The ATCMs have the benefit of the CEP's expert advice at a very modest financial cost.
The ATS is an international political organisation that will not delegate authority greater than its own to one of its committees or organisations. The ATS acts "slowly and cautiously" and the recent example of CCAMLR being admonished by the ATS due to its actions being perceived as "a child of the Treaty system frustrating the parent" illustrates the political reality within which the CEP operates. Despite the limitations within which the CEP operates it has proved to be an effective advisor and has successfully – albeit incrementally - advocated for increased implementation of the Madrid Protocol.

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APPENDIX ONE

ACRONYMS AND ABBREVIATIONS

ASOC	Antarctic and Southern Ocean Coalition
ASMA	Antarctic Specially Managed Areas
ASPA	Antarctic Specially Protected Areas
ATS	Antarctic Treaty System
ATCM	Antarctic Treaty Consultative Meeting
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CEE	Comprehensive Environmental Evaluation
CEP	Committee for Environmental Protection
COMNAP	Council of Managers of National Antarctic Programmes
EIA	Environmental Impact Assessment
IAATO	International Association of Antarctic Tour Operators
ICG	Intersessional Contact Group
ICSU	International Council for Science
IEE	Initial Environmental Evaluation
IHO	International Hydrographical Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IP	Information Paper
IUCN	World Conservation Union
SATCM	Special Antarctic Treaty Consultative Meeting
SCAR	Scientific Committee on Antarctic Research
SPA	Specially Protected Areas
SSSI	Site of Special Scientific Interest
UNEP	United Nations Environmental Programme
WG	Working Group

APPENDIX TWO

Management Plan for
Antartic Specially Protected Area (ASPA) No. 106
CAPE HALLETT, NORTHERN VICTORIA LAND, ROSS SEA
(Lat. 72°19′S, Long. 170°16′E)

1. Description of values to be protected

In addition to the ecological and scientific values described, the Area possesses outstanding aesthetic values, with its combination of prolific biological resources and the impressive surrounding scenery of Edisto Inlet and Mt. Herschel (3,335 m).

2. Aims and objectives

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;
- permit scientific research;
- allow environmental clean-up and remediation;
- minimize the possibility of introduction of alien plants, animals and microbes;
- allow visits to the managed zone;
- allow visits for management purposes.

3. Management activities

- Signs showing the location, boundaries and clearly stating entry restrictions shall be placed at appropriate locations at the boundaries of the Area.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition, and removed when no longer necessary.
- Visits shall be made as necessary (no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure that management and maintenance measures are adequate.
- National Antarctic programs operating in the region shall consult together for the purpose of ensuring that the above provisions are implemented.

4. Period of designation

Designated for an indefinite period.

5. Maps

Map A: Cape Hallett Antarctic Specially Protected Area No. 106 topographic map.
Inset: The Moubray Bay region of Northern Victoria Land, Ross Sea

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

Cape Hallett is located at the southern end of Moubray Bay, Northern Victoria Land, in the western Ross Sea. The protected area occupies ice-free ground of a cuspate spit of low elevation known as Seabee Hook and includes the adjacent western slopes of the north end of the Hallett Peninsula (Map A).

6(ii) Restricted and managed zones within the Area

A managed zone is designated on Seabee Hook to allow access by tourist expeditions to the Area subject to permit and the provisions of this management plan. The managed zone encompasses the site of the former station, and extends from the northeast corner (170°13′00″E, 72°40′00″S) at a rocky part of the north shoreline on Seabee Hook, due south for 118 m to a series of mounds used by breeding penguins. The boundary extends 205 m west following the north side of these mounds, south of a region which was levelled for construction of Hallett Station, to the USGS geodetic station 'Fisher' (170°12′40″E, 72°19′07″S) which is set in a prominent concrete block structure (2×1×1 m). The boundary extends from 'Fisher' 150 m due west to a point 25 m inland from the coastline. The boundary of the managed zone then extends south as a 25 m wide coastal 'corridor' around the shores of Seabee Hook to an easternmost point at the northernmost point of Willett Cove (170°13′18″E, 72°19′08″S).

6(iii) Structures within and near the Area

Cape Hallett Station was established on Seabee Hook in December 1956 and closed in February 1973. The USGS geodetic station 'Fisher' (170°12′39.916″E, 72°19′06.7521″S) is situated 70 m SE of the centre of the SE side of the dome building (1996 position) and 24 m south of the SE corner of the southernmost hut.

6(iv) Location of other protected areas within close proximity of the Area

The nearest protected areas to Cape Hallett are Mt. Melbourne (ASPA-118) and Cryptogam Ridge (ASPA-118) (also on Mt. Melbourne), Victoria Land, near Wood Bay, 240 km to the south.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a permit.

7(i) Access to and movement within the Area

Access into the Area shall be by small boat, foot or by helicopter. Access to the managed zone shall be on foot or by small boat from the coast of Seabee Hook (Map A). All pedestrian traffic should be kept to the minimum necessary. Visitors should avoid walking on visible vegetation.

7(ii) Activities that may be conducted in the Area

- scientific research;
- essential management activities;
- visits to the managed zone for historical, educational or recreational purposes;

7(iii) Installation, modification or removal of structures

No structures are to be erected within the Area except as specified in a permit. All scientific equipment installed in the Area must be authorized by permit and clearly

identified by country, name of the principal investigator and year of installation.

7(iv) Location of field camps

Permanent field camps are prohibited within the Area. Temporary camping is permitted (see Map A).

7(v) Restrictions on materials and organisms that can be brought into the Area

No living animals, plant material, microorganisms or soils shall be deliberately introduced into the Area, and precautions shall be taken against accidental introductions. Fuel, food, and other materials are not to be deposited in the Area.

7(vi) Taking or harmful interference with native flora or fauna

Taking or harmful interference of native flora and fauna is prohibited.

7(vii) Collection or removal of anything not introduced by a visitor

Material may be collected or removed from the Area only in accordance with a permit.

7(viii) Disposal of waste

All wastes shall be removed from the Area.

7(ix) Measures that may be necessary to ensure that the aims and objectives of the plan continue to be met

Of particular concern are microbial and vegetation introductions from soils at other Antarctic sites, including stations, or from regions outside Antarctica.

7(x) Requirements for reports

Parties should ensure that the principal holder for each permit issued submits to the appropriate authority a report describing the activities undertaken.

APPENDIX THREE

Antarctica's Future Environmental Challenges

A summary report of the CEP Workshop, Edinburgh, United Kingdom, 9–10 June 2006

Antarctica's Future Environmental Challenges

A summary report of the CEP Workshop, Edinburgh, United Kingdom, 9–10 June 2006

Working Paper submitted by the Steering Committee
(United Kingdom, Australia, France)

Summary

1. This paper summarizes the key findings arising from the Committee for Environmental Protection (CEP) Workshop, held on 9–10 June 2006. These findings are submitted to CEP IX for further consideration. The CEP is asked to consider the key Workshop findings as a basis for developing a forward strategy for the CEP.

Background

2. At the CEP VII meeting in 2004, the Committee briefly discussed the need to give some consideration to the future work of the CEP with respect to environmental challenges in Antarctica, and agreed that this subject should be further discussed at CEP VIII (*CEP VII Final Report*, paragraph 208).

3. Two relevant papers were submitted to CEP VIII:

   WP 001 *Working Paper to initiate a strategic discussion on future environmental challenges in Antarctica* (Sweden) and

   WP 009 *The Committee on Environmental Protection of the Antarctic Treaty: An Overview and Likely Future Scenarios* (Argentina).

   Two open-ended contact groups were established to consider the future work of CEP:

   (1) on the "must-do" tasks of the CEP (*CEP VIII Final Report*, Annex V); and

   (2) strategic issues (Annex VI).

   The CEP agreed on the importance of building on the thoughts of these groups and established a Steering Committee comprising the Chair, Vice-chairs, Secretariat and the United Kingdom (as host of CEP IX) to stimulate intersessional discussions on the future work of the CEP.

4. The United Kingdom hosted a Workshop for the Committee for Environmental Protection to consider the environmental challenges likely to face Antarctica over the next 15 years and beyond, and to devise policies, recommendations and strategies to meet them. The Workshop was held at "The Hub" in Edinburgh on 9–10 June 2006.

This Workshop was informal: those attending spoke as individual experts, rather than as representatives of national Delegations.

5. The agenda for the Workshop is in IP 113. Dr Tony Press, CEP Chairman, chaired the Workshop which was attended by 67 experts (the full list of attendees is in IP 113). Keynote presentations were made on some of the environmental issues Antarctica faces over the next 15 years arising from external (global) factors such as climate change, as well as internal factors such as trends in human activities and environmental impacts and changes within Antarctica. (Details of the speakers and a synopsis of each presentation are in IP 113).

6. CEP Members were invited to present posters, which covered a range of environmental issues in detail. 17 posters were presented at the Workshop and a full list of the posters, together with a brief summary of their contents is in IP 113.

7. Workshop delegates discussed the keynote and poster presentations in small groups and subsequently in plenary. The workshop participants divided into groups, each of which focused its discussions on the following topics:

   - Vision for the Antarctic in the next 15 years
   - Top 5 environmental issues
   - Headline goals to address those environmental issues
   - What actions can the CEP take?

8. Each group reported on the key environmental issues. These can be summarized as follows:

   - Internal (from human activities in the Antarctic)
     - Overall footprint of Antarctic activities
     - Number of people (government & non-government) undertaking activities in Antarctica
     - Proliferation of stations
     - Access to new areas
     - Introduction of non-native species
     - Pressures from commercial activities:
       - Harvesting of marine living resources
       - Mineral resource activity
       - tourism
       - bioprospecting
       - Water (ice) harvesting
     - (Concatenation of pressures)
   - External (from outside the Antarctic)
     - Climate changes
     - Pollution
     - Ozone depletion
     - "Natural" introductions of non-native species
     - Ocean change (i.e. acidification)

9. A summary of the thoughts on possible goals and priorities identified by these discussion groups is included in IP 113.

10. Following consideration of the main issues facing the CEP, workshop participants broke into small groups to consider what actions the CEP should take (and when) against these main issues.

    The results of these considerations are tabulated below.

11. On behalf of the participants in the workshop, the workshop Chairman and the Steering Committee present the findings in this paper for consideration and action by the CEP.

CEP Actions to Address the Major Environmental Issues Facing the Antarctic

What?	When?
Area Protection	
Establish a Standing Group on Area Protection and Management to consider management plans	CEP IX
Standing Group to develop terms of reference and a work plan	CEP X
Collaborate with CCAMLR on MPAs	CEP X
Do an audit of the and a gap analysis protected areas system	
Do a risk analysis to identify issues requiring immediate attention	
Develop an agreed understanding of intrinsic / wilderness values	
Establish a database of protected/managed area information	
Improve management of protected areas	
Quarantine	
Consider outcomes of the Biosecurity workshop (NZ, April 2006)	CEP IX
Promote awareness-raising by national programmes	ASAP
Consult with COMNAP and SCAR to produce practical guidelines on quarantine	~2 years
Request SCAR to undertake research to improve understanding of biological regions of Antarctica and the potential impacts of non-native species	~5 years
Reports to CEP on the implications of new technologies using non-native species (e.g. sewage treatment)	CEP X
Quarantine (continued)	
Encourage Parties to make better use of current Protocol procedures (e.g. EIA, management plans) to address quarantine issues	ASAP
Revise the list of prohibited products in Annex II	As appropriate

Species Protection	
Review status of Antarctic species	ongoing
Develop and strengthen relationship with ACAP	<1 year
Appoint a CEP representative to ACAP	CEP IX
Watching brief in other relevant forums	on-going
Clean up, waste and energy management	
Encourage all national operators to attend the AEON waste management workshop	CEP IX
Consider the outcomes of the AEON waste management workshop	CEP X
Request COMANP to investigate recycling standards and targets	CEP X
Urge Parties to provide the CEP with lists of disused / abandoned bases	CEP X
Request Parties to provide inventory of sites of past field activities and intentions for clean up	CEP X
Request COMNAP to develop Guidelines on disposal of human wastes	CEP X
Promote achievements and best practice	ongoing
Request COMNAP to produce a working paper on best practice energy management	CEP X
Encourage collaboration between Parties and with international organizations on removal and clean up of bases	CEP XI
Collaboration	
CEP Chair and Chair SC-CCAMLR to agree on a process for efficient consideration of management plans for protected areas with a marine component	CEP X
Hold a workshop with SCAR/CCAMLR to establish a list of CEP-related research requirements	CEP X
Establish an ICG to consider future collaboration to build on the the IPY	CEP X
Monitoring the implementation of the Protocol and structuring the business of the CEP (continued)	
CEP to identify key elements of environmental concern (if any) arising from existing, new or predicted activities to advise those	

assessing EIAs	
Request Secretariat to prepare annual summary of Article 17 information	CEP IX
Education and outreach (including "in-reach")	
Compile current examples of networks and projects from Parties and non-ATS bodies	CEP X
Encourage initiatives and make recommendations to various bodies (e.g. IPY Secretariat)	CEP X
Mandatory training of people going to work in Antarctica	2007-2009
Develop training tools and materials	2007-2009
Involve local NGOs in education and outreach activities	2007-2009
Interactive activities	2007-2009
Develop web-based systems for education and outreach	2007-2009
Establish Ambassador programme	2011
Review	2011

APPENDIX FOUR

RECOMMENDATION ***(based on that used for establishing the Antarctic Secretariat)***

SECRETARIAT OF THE COMMITTEE FOR ENVIRONMENTAL PROTECTION

The Representatives,

Recalling the Antarctic Treaty and the Protocol on Environmental Protection to the Antarctic Treaty (the Protocol);

Recognizing the need for a secretariat to assist the Committee for Environmental Protection (the CEP) in performing its functions;

Recommend to their Governments the following Measure for approval in accordance with paragraph 4 of Article IX of the Antarctic Treaty:

ARTICLE 1
Establishing The Committee for Environmental Protection Secretariat;
The CEP Secretariat shall constitute an organ of the ATCM. As such it shall be subordinated to the ATCM.

ARTICLE 2
Functions:
1. The CEP Secretariat shall perform those functions in support of the CEP which are entrusted to it by the ATCM;
2. Under the direction and supervision of the CEP the Secretariat shall, in particular:
(a) Provide technical advice, and coordination of such advice, for the CEP to consider using when providing its report to the ATCM;
i) Preparatory work for and distribution of the meeting agendas and reports;
ii) Translation of meeting documents;
iii) Provision of interpretation services;
iv) Copying, organizing and distributing meeting documents; and
v) Assisting the CEP in drafting the meeting documents including the final report;
(b) Support intersessional work of the CEP by facilitating the exchange of information, organizing meeting facilities and providing other secretariat support as directed by the ATCM;
(c) Facilitate and coordinate CEP related communications and exchange of information amongst Parties as required under the Antarctic Treaty and the Protocol;
(e) Establish, maintain, develop and, as appropriate publish, databases relevant to the operation of the Antarctic Treaty and the Protocol in conjunction with the Antarctic Secretariat;
(g) Record, maintain and publish, as appropriate, the records of the CEP and of other meetings convened concerning the Protocol;
(h) Facilitate the availability of information about the CEP;
(i) (j) Assist the CEP in reviewing the status of past Recommendations and Measures adopted under Article IX of the Antarctic Treaty;
(k) Under the guidance of the CEP, take responsibility for maintaining and updating an Antarctic CEP "Handbook"; and
(l) Perform such other functions relevant to the purposes of the Antarctic Treaty and the Protocol as may be suggested by the CEP and determined by the ATCM.

ARTICLE 3
Executive Secretary
1. The CEP Secretariat shall be headed by an Executive Secretary who shall be appointed by the ATCM from among candidates who are nationals of Consultative Parties. The procedure for the selection of the Executive Secretary shall be determined by a Decision of the ATCM.
2. The Executive Secretary shall appoint staff members essential for the carrying out of the functions of the CEP Secretariat and engage experts as appropriate. The Executive Secretary and other staff members shall serve in accordance with the procedures, terms and conditions set out in the Staff Regulations which shall be adopted by a Decision of the ATCM.
3. During the intersessional periods the Executive Secretary shall consult in a manner to be prescribed in the Rules of Procedure.

ARTICLE 4
Budget
1. The CEP Secretariat shall operate in a cost-effective manner.
2. The budget of the CEP Secretariat, submitted by the CEP, shall be approved by the Representatives of all Consultative Parties present at the ATCM.
3. Each Consultative Party shall contribute to the budget of the CEP Secretariat. One half of the budget shall be contributed equally by all Consultative Parties. The other half of the budget shall be contributed by the Consultative Parties based on the extent of their national Antarctic activities, taking into account their capacity to pay.
4. The method for calculating the scale of contributions is contained in Decision 1 (2003) and the Schedule attached to it. The ATCM may amend the proportion in which the abovementioned two criteria shall apply and the method for calculating the scale of contributions by means of a Decision.
5. Any Contracting Party may make a voluntary contribution at any time.
6. Financial Regulations shall be adopted by a Decision of the ATCM.

ARTICLE 5
Legal capacity and privileges and immunities
1. The legal capacity of the CEP Secretariat as an organ of the ATCM as well as its privileges and immunities and those of the Executive Secretary and other staff members in the territory of New Zealand shall be provided for in the Headquarters Agreement for the CEP (the Headquarters Agreement) hereby adopted and annexed to this Measure, to be concluded between the ATCM and New Zealand.
2. The ATCM hereby authorizes the person who holds the office of the Chair to sign the Headquarters Agreement on its behalf at the time this Measure becomes effective.
3. The CEP Secretariat may exercise its legal capacity as provided for in Article 2 of the Headquarters Agreement only to the extent authorized by the ATCM. Within the budget approved by and in accordance with any other decision of the ATCM, the CEP Secretariat is hereby authorized to contract, and to acquire and dispose of movable property in order to perform its functions as set out in Article 2 of this Measure.
4. The CEP Secretariat may not acquire or dispose of immovable property or institute legal proceedings without the prior approval of the CEP and ATCM.